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Ali-changi or Chagudduk to Bushire, 4 h. r., 16 m.

Road across a salt swampy marsh. The road-track is firm in fine weather, and makes a long sweep to the s. On the right is an arm of the sea.

C. Clerk, f.r.g.s.,
Lieut. 2nd Madras Cavalry.

May 1*st*, 1859.

V.—*Journal of Australian Exploration.* By Mr. John M'Douall Stuart, Gold Medallist, f.r.g.s.

Read, March 12, 1860.

Friday, April 22, 1859.—Went to the top of Mount Hermit, and obtained the following bearings:—Mount Reynolds, 84°; north-east point of North Lake Torrens, 28°; the centre of ditto, 335°; the small island, the nearest point to this hill, 344° 15′; south-west of lake, 291°; Major Warburton's cone of stones, 197° 30′; ½ mile north, 115° 45′; camp, 5°; latitude, 29° 32′ 34″. Sun's alt. 26° 25′ 45″; index error, 1° 30′. The view from the top of Hermit Hill is very extensive from north-west to north-east of North Lake Torrens. I could see all round it; it is surrounded by low hills, and in the far distance there seems to be rising ground. To the south are broken hills, the termination of the Mount North-West range; that part of the country I shall examine to-morrow. Between this and the lake to the north the country is very rough; broken cliffs, with sand; the good country does not extend beyond 3 miles. Beyond this the lake is 7 miles distant; the springs are very numerous all round this mount, and seem to drain into the lake; they are round the hills from west to south; they give out an immense quantity of water, and there are many streams of water running from them. Round about the spring the ground is covered with a cake of soda and saltpetre; not salt, as many would take it to be. This mount is Mr. Babbage's Hermit Hill. It is my opinion there are more springs to the south, which induces me to search to-morrow before going to Chambers Creek. The little hills about it are visible from this. I intended to have moved on to Gregory Creek this afternoon, but took the precaution to send my stockman to examine it, in order to see what state the water was in. My reason for not going on at once to Chambers Creek is that it will be too far to examine the country between this and South Lake Torrens. My stockman has returned, and reports the water in the creek to be quite salt, and many of the small fishes dead. He also found some fossil shells, the mussel oyster; they have now become a solid limestone; they were found in a large circular piece of limestone, and very perfect.

Saturday, April 23.—Started at 8 a.m., with Hergott, to examine the country south of this, towards a high conical hill at the north-west point of the range. The country between this and the range is very good; in some places it is a little rotten, and a little stony; but the range is a beautiful grass country to the very top. In the creeks the grass and other plants are growing luxuriantly, but we could find no water. I was unable to prosecute the search as far as I wished, in consequence of my horse having lost a shoe and becoming quite lame, which forced me to return to the camp, where we arrived at 9 p.m. The view from the Conical Hill is very extensive, except to the south, which is limited. We saw smoke in one of the creeks to the east. I was anxious to examine the creek to the south-west, which we saw from the top of the Conical Hill; I therefore did not go to where the smoke rose, thinking that the blacks might only be hunting; I crossed the hills over

a good feeding-country, timbered with box or gum trees. It is the course of the one Major Warburton passed; we expected to find water in it from the great number of birds of all descriptions that were flying about. We followed it down, but were unsuccessful, although the birds continued all the way. There must be water about the hills in some place. At sundown my horse becoming very lame I was forced reluctantly to return. The flow of the waters is northward, into North Lake Torrens. On Monday I shall start again to the south-west, and leave the examination of the range to the south-east until my return. The Conical Hill is composed of white granite, with black spots. Mount Attraction bears 81° 52′; Reynolds, 72° 32′; Hermit, 319° 48′.

Sunday, April 24.—Sun's alt. LL, 94° 54′; index error, 1° 30′; it is rather cloudy, and I cannot depend upon it. Latitude, 29° 33′ 30″.

Monday, April 25.—It has the appearance of rain, and should it do so, I am afraid I will be delayed here. The country will be very soft, so that I shall go to Chambers Creek to-day and examine the within country from there. Started at 9½ A.M. on a bearing of 242°. The first portion of the country travelled over to-day, for 3 miles, was gravelly and rotten, scanty for feed, but afterwards it became very good indeed; on the banks of the two creeks passed by Major Warburton it was splendidly grassed; the water very salt. I sent the botanist to examine them to the north, and my stockman to the south, but they returned without finding any fresh water. They flow into Lake Torrens. After leaving the creek we passed over about 4 miles of sand-hills, very rich with feed, thence over some stony ground to the creek, all good. My course brought me about ¾ of a mile to the south of the creek, which I expected. Distance from the springs to this water-hole 2 miles. This is a very long water-hole, with plenty of water in it, and the feed good. We have passed some fresh tracks of natives, but have seen none.

Tuesday, April 26.—I intend to remain here to-day to fix this place, and examine the country about it. Sun's alt. LL, 23° 38′ 30″; index error, 45′ off; latitude, 29° 39′ 9″. I sent my stockman in one direction and the botanist in another. They report immense quantities of water, also a great deal of salt water, with plenty of salt for the use of stations, and abundance of feed. The stockman saw some fresh tracks, but did not see any natives. The fires were still burning. The botanist saw an old man, a Lubra, and a little one; they were very much frightened. When he approached they called out "Pompoy!" and moved their hands for him not to come any nearer. They seemed quite unwilling to hold any conversation; he therefore left them.

Wednesday, April 27.—Started this morning at sunrise, accompanied by the botanist, on a bearing of 165°; 1¼ mile obtained following bearings:—Granite Hill, 89° 30′ 2″; Mount Strangways, 190°; Turret Hill, 164° 30′. Changed my course to 158° 151′, at 4 miles opposite the Mount Strangways; at 7¼ miles crossed a water-course; at 10 miles crossed a tea-tree creek, but no water; 11 miles opposite Turret Hill. At 11½ A.M. ascended the hill for which I was steering, 18 miles. Obtained an observation of the LL, 92° 7′ 15″; index error, 1° 30′; and the following bearings:—Hermit Hill, 28°; Granite Hill, 69° 45′; Turret, 330°; Mount Strangways, 316°. Started again 12½ A.M.; at 1 mile changed my course to 30°, 1 mile to a place where I thought springs might be, but we could find none. At this point the sand-hills commence. The country from the creek to this point has abundance of feed upon it, but no water that I could see, although I have not the least doubt that there is some. After a little rain there must be plenty for a long time. No rain seems to have fallen here this season. There is no green grass except on the banks of the Chambers Creek. From this place I have changed my course to the south-east, in case I should miss the lake. At 8 miles saw some gum-trees on our east side; changed my course to examine them to 70°; 3 miles, struck the gums, but found them to be a small hill of dwarf gums and

mally, surrounding a dry lagoon 1½ miles broad by 3 long, quite dry. We followed it round, expecting to find some water at its shores, but were disappointed. East 1 mile, camped for the night without water; the horses being very tired coming through the heavy sand. We travelled to-day 30 miles; we were now upon a large open plain, stony, but plenty of vegetation. I do not doubt but water will be found upon it, but it required to be examined after a shower of rain that will put some water into the clay-pans; these have appearances of water round them; the drainage from the sand-hills that I have passed over seemed to be received by this plain. No sign of the lake. Latitude, 29° 53′ 58″.

Thursday, April 28th.—Saddled by break of day. I must change my course to see if the water is still at Yarra Wirta; the horses are very much in want of it. If there is no water there, I shall have to go back to the creek, which will be very annoying, as my object is to see if that is an arm of the lake or a separate lake. Our course is 225°, 3½ miles, over the points of the sand-hills; 4 miles, over a stony plain, with dry lagoons; changed to a high sand-hill to try if I could see anything of the lake. 150°, 3¾ miles, we are now in sand-hills again. Can see nothing of the lake, but I can see the hills at Yarra Wirta; to take a straight course would take me through the heavy sand-hills, which will not do for the horses if there is no water there: I shall therefore steer for the creek, and follow it down. 225°, for 3½ miles, struck the creek a little to the north of where I crossed it on my former expedition. Followed the creek down, passed my former encampment; found no water there. Followed it down to where I considered it permanent, and found it still there; 8 miles, bearing 190°.

I will give the horses two hours' rest here, then proceed to the lake; if I can find no more water, I shall require to return here to-night, as I find that our course will be to the south of east; and as it is late in the afternoon, and most likely have to go the same course to-morrow, I prefer giving the horses the afternoon to recruit, and start early in the morning; they will be then able to do two good days' journey without difficulty, if we do not get water to-morrow night. Distance, 22¾ miles. The water comes from the banks, which are wet for about 3 feet above it, the water filtering through the slate; the creek has a slate bottom; there are some plants on the banks which are found on permanent water; about a month ago there seems to have been a shower of rain, for on examining the creek we found some rain-water in the holes.

Friday, 29th April.—Started at sunrise on a bearing of 96° 30′. 1 mile, opposite the west point of the lake the Yarra Wirta empties itself into it. It is distant about a mile. Changed our bearing to 88°, along the north shore of the lake. The bearing of the west shore is 146° 30′, the centre 131°; the country close to the lake is very stony and scanty of feed; there is some water in it, but it is very salt; a few salt creeks run into it, but no great body of water. Ascended a long high hill to obtain an observation of the sun and to have a better view of the country. Sun's alt. LL, 90° 39′ 15″; index error, 1° 30′ off. The following bearings were taken:—east side of the lake, 151°; Mount Deception, 121° 30′; Termination Hill, 97°; Mount North-West, 58° 48′ 45″; latitude, 30° 8′ 11″. There is no appearance of any lake between this point and Mount Deception; it appears to be a stony plain, with some ridges of sand-hills, and there seems to be plenty of feed, but I did not see any gum-creeks. There may be some nearer the ranges. This hill, which I have named Mount Polly for distinction, is the easternmost of the flat-topped hills. Camp. Our return journey was across sand and small stony plains, some with cane-grass, dry swamps (that was after leaving the stony range), with plenty of feed.

Saturday, April 30th.—Sent Müller and stockman to build a cairn of stones

upon the highest of the three table-top hills, for the base-line of the survey; they are three remarkable hills close together, two can only be seen coming from the south and from the north-east. Alt. of sun's LL, 90° 56′ 30″; index error, 1° 30′; latitude, 29° 40′ 27″. From the hill the men saw a number of native smokes to the westward on the creek, but have seen none of them.

Sunday, May 1st.—This morning we had a heavy dew. At noon got an observation of the sun. Lower limb, 90° 19′ 45″; index error, 1° 30′; latitude, 29° 40′ 9″. Went to the top of the three table-tops, and obtained the following bearings:—Camp, 117° 15′; Tent and Turret Hill, 161° 30′; Mount Strangways, 152° 45′; Tent Hill, also Mount Snip, 149° 15′; Mount North-West, south point, 113°; second, 108°; Granite Hill, 94° 50′; Hermit Hill, 76° 30′; Mount Hamilton, 331° 30′; next table-top to it, 326°; North Table-top, 323° 45′; North Lake Torrens, west point, 27°; Lake Phipps, 54°; south-west bend of this creek, 221°, 1¾ miles; farthest bend, 213° of Mount. The creek south 1 mile. On the bearing to Mount Strangways will cut the creek 1½ miles; to the point of the North-West range, 292° 40′; to the Small-nob range, 88°. From the top of this hill I had a fine view of Mount Hamilton and the lagoon where the springs are, and the other hills: they are the same hills that I saw on my north-west course when on my last journey. I described them as lying to the north-east, and the appearance of a light shade being at the foot of them; that light shade must have been the lagoon that I now see. The country is stony, but well grassed. The Hermit Hill I also saw when I first came to this creek.

Monday, May 2.—Müller and stockman are gone to build a cairn of stones on Mount Strangways, which I have fixed as the south point of my base line. Plotting and making plan. Sun's LL, 89° 47′; index error, 1° 30′; latitude, 29° 39′ 15″. The mean of all the observations that I have to-day here makes the latitude to be 29° 39′ 15″.

Tuesday, May 3.—Started at 7½ A.M. Ascended the east range, and got the following bearings:—Mount Hamilton, 317° 45′; the Twins, 267°; Mount Strangways, 186°; Tent Hill, 169° 43′; Turret Hill, 189° 30′; Mount Snip, 164°; south mount, North-West, 111°; Granite Hill, 97° 15′; creek, 1¾ miles; camp, 10°; creek, east, 1¾: Mount Bitternut Hill, 75° 30; next point, 41°. Left this point, 10½—11½—3½ miles, to a low hill, and obtained the following bearings:—Twins, 244°; Nob, 220°; Mount Strangways, 196°; Tent, 180°; Granite Range, 103°; creek, 1 mile; Hermit Hill, 81°; creek, ¾ mile; Lake Phipps, 33° 30′; creek, 2¼ miles, 10°; course, 351° 30′; to the creek, 4 miles; creek same course by the side of the creek, 9 miles, 1¾ miles, 10 miles, 200, 340°; crossing tracks, 1¾; ½ mile to the creek. Same bearing, got 1¾ mile, struck the Margaret. Obtained the following bearings:—Mount Hamilton, 276° 45′; Twins, 198° 15′; Nob, 177° 30′. To fix the large fresh-water holes, Mount Hamilton, 285°; Twins, 203°; Nob, 179° 30′; water-hole, ¼ mile east; returned to the camp more to the west to examine. The country we have passed over to-day is good. The Margaret at the junction is brackish, but not undrinkable; so are also some of the water-holes in Chambers Creek, running towards the lake, and will do for stock. There are plenty of fresh holes besides them. On our course back we crossed excellent feeding-country. The water is good for washing wool, as it contains soda.

Wednesday, May 4.—I intend to move to-day to the large water-holes westward, where I first struck the creek. It has very much the appearance of rain. I hope it will remain fine for a short time longer, until I finish my examination of the country. I could not have a better season to do it in, and prove the permanence of the water. There is no appearance of rain having fallen here this season, and what water there is now must be permanent.

Thursday, May 5.—Moved the camp to a better situation, ascended a hill, got some bearings to fix it, and built a cone of stones. Mount Strangways, 76°; Nob, 46° 30′; Twins, 33°; to the last points, 30°; Turret Hill, 85°. The country is rather stony here for about 1½ mile, from that to the range (Stuart's) are low sand-hills covered with grass, mulga-scrub, and acacia, with large dry clay-pans, from between which the creek, with the water on it for 3 miles, where it joins this. I have had it run up to the sources to-day; there is no more permanent water; the feed good. On the top of the north hills it is not so good, and very stony; it is table-land. The water-ponds still continue for 5 miles further up the main creek; there are immense numbers of small fish in the ponds, and on the banks there is a shrub growing that tastes and smells like cinnamon. We happened to stir up the sugar in a panikin of tea with a small twig of the bush, and it left quite the flavour of it in the tea. I have had Hergott to take sketches of some of the ponds, also the fish, and other remarkable things. It has been rather cloudy to-day, and I could not depend upon my observation. I must endeavour to get it to-morrow, and send the men on to build another cone of stones on a hill to the south-west, for another trig-station. There are numerous tracks of natives about, but we do not see any of them; we have also found some new plants in the creek. Bearing from the camp to the last cairn of stones, 112° 45′, to where the next cairn of stones will be, 228° 15′.

Friday, May 6.—Moved further up the creek on the south side to the last water that we knew of: it is rain-water, very large, and will last a long time; well sheltered by gum-trees and other shrubs. The country is not so good, although there is plenty of feed; it is rather stony in some places. Our course to-day from the camp was 241°; 5 miles thence, 320°; 2½ miles to the creek; thence 90°; 1 mile to the water. It was too cloudy to get a good observation of the sun.

Saturday, May 7.—Sent Müller to see if there is any more water to the west; went to the top of a small hill, built a cairn of stones, to connect this point; the bearings are: to the last point 78° 30′; to the former one 64° 45′; Mount Strangways Hill, 76° 30′; to the Gums West, 270°; camp, 62°. Sun's alt. 86° 41′ 15″; index error 1° 37′ app.; latitude 29° 44′ 52″. Müller returned after dark, and reports that there is no more permanent water. I shall start to the north to-morrow; the country is not so good to the west; it begins to get more stony, and less grass. Obs. of sun's LL, 86° 41′ 15″; index error, 1° 37.

Sunday, May 8.—Started to the north over the range, which is rather difficult to get the horses up and down. On the top it is very stony, with salt-bush, and grass scanty; there is also a ridge of sand here running along the centre, with good feed. We descended into an undulating stony country, with plenty of grass and salt-bush, crossed the Margaret and salt-creek, in which there is water; some salt and some brackish, but not unfit for the use of cattle. There is abundance of feed all round. We arrived at Hamilton Springs a little before sundown. Distance 20 miles.

Monday, May 9.—Mount Hamilton. Some of the horses require to be shod to-day. I shall also require to build a cairn of stones upon Mount Hamilton (the one built by Major Warburton having fallen down), and get an observation of the sun, which is—LL 86° 9′ 15″; index error, 1° 45′ app.; lat. 29° 27′ 37″. The springs are certainly very remarkable, and Major Warburton gives a very good description of them. I got the following bearings on the top of the Mount:—Hermit Hill bearing 102°; Nob, 137° 30′; Twins, 151°; Mount Hugh, 319° 45′; Beresford Hill, 306° 30′.

Tuesday, May 10.—Started for the Beresford Springs; course 320° to Mount Hugh, at 4¾ miles, and passed on the north side of Coward Springs, distant ¾ of a mile. I did not go to look at them, they do not appear to be anything

very great. I shall leave them until I return, the day after to-morrow; from the appearance of Mount Hugh, I expect something good.

At 11 o'clock A.M. arrived at Mount Hugh, 7 miles distant from Mount Hamilton, and, as I anticipated, found a splendid number of springs; they give out a copious stream of water; named them the Elizabeth. There is enough water running to drive a flour-mill in two or three places. They are really remarkable springs, such a height above the level of the plain. I saw them from a hill on Chambers Creek (The Twins). From whence do they derive their supply of water, to cause them to rise to such a height? It must be from some high ranges to the north-west, or a large body of fresh water lying on elevated ground. This is another strange feature of the mysterious interior of Australia. I shall remain here until after 12 to-morrow, to get an observation of the sun to fix this hill. I shall return to Mount Hamilton, and proceed to examine the country west of North Lake Torrens, for one of the east runs, which will complete my survey of them, from which place I shall despatch a messenger to Oratunga.

Wednesday, May 11.—The obs. of the sun's LL, 85° 26′; index error, 1° 45′ app.; lat. 29° 17′ 43″. I omitted to mention yesterday that, 2 miles before we reached Beresford Hill, we crossed Pasley Ponds; saw one of the Major's camps. The water is brackish, but not bad; the white deposit round these springs (also the Elizabeth) is soda. In returning, I examined the Coward Springs. The water is good, and running; there is a plentiful supply. It was dark when I arrived at Mount Hamilton. I saw some natives to-day, four in number, but they gave us a wide berth; they do not like to come near us.

Thursday, May 12.—Some of the horses require shoeing, and I wish to get another observation of the sun. I shall remain here to-day, and examine the country to the north-east. About 7 miles in that direction is the salt-creek of Major Warburton. The country is of a light sandy soil, covered with grass.

Friday, May 13.—Started to the eastward, to see what that is made of. Completed the survey of the runs and springs. I think there must be some more before we reach the lake. To the south of east, about 4 miles, we discovered four springs not seen by the Major. There is a plentiful supply of water, and would be more if opened: one choked up with reeds, the other two are running. The ground moist all round. Saw some natives; they seemed frightened at first, but were induced to come close up. They were very much amused at our equipments. Two had seen a party of whites before. They knew the name of horse, but no more; they call water, *mauwe*, and some of their words very much resemble those of the natives in Port Lincoln. We could make nothing of them. They repeat every word of the question we ask; they followed us over to the Margaret, and took us to some fresh-water springs in the creek, which is very good; the water is very good; there is a quantity of reeds growing round them, also tea-tree. From this we followed the creek to the north, thence north-east towards the lake, but the water being too brackish I returned to the springs, the natives walking with us all the time; they seemed very inoffensive. The country travelled over to-day is of the same description, all good. In following down the creek, another native joined us from the creek with a net in his hand, in which were some small fish: the net was a hoop one, well made.

Saturday, May 14.—The morning very cloudy, every appearance of rain; saddled and proceeded in search of Emerald Spring. On a north course, at 7 miles, made Mr. Babbage's old camp on a sand-hill; camped a little way from it, not knowing the position of the spring. Hergott informs me that it is 3 miles to the west. It commenced raining before we started, has rained all the way up, and is still doing so: it is a very light rain, but there is a very

strong, and very cold wind from the south-west; intended to have brought up my plan, but the rain and wind prevent me.

Sunday, May 15.—Warmer Creek. It cleared up during the night, but the clouds have come up again this morning, and look very threatening. Sent Hergott to find the spring; the wind still from the same quarter, and too strong for me to do anything to the plan, which is a great annoyance; for from this place I shall finish the survey of the runs, and send the stockman back to Oratunga with the plan. Hergott did not return until after sundown; he could not find the spring.

Monday, May 16.—Sent Müller to the west; obtained an observation of the sun, but not a good one; engaged with my plan. Müller returned at 10 o'clock, having found the spring, bearing to it 129°, about 2½ miles distant from this camp. It is not hot, but a little warmer than milk-warm. There is a good stream running from it, and the water is excellent; to me it has a mineral taste, very good. In the creek down in the lake there is some water, but it is salt. There are a number of small fish lying dead on the bank near the mouth: they seem to have been left there by the retiring of the flood; they are quite dried up. I intended to have taken some with me, but they are too dry, nothing but skin and bone. The creek empties itself into the lake, about a mile north, from where Chambers Creek goes into it. Distance from this camp about 5 miles.

Tuesday, May 17.—Again very cloudy, with a little rain; finishing the survey. Could not obtain an observation of the sun. Wind same way very strongly.

Wednesday, May 18.—Clearing up; hope it will do so, and let me get an observation; engaged with survey, and preparing tracing for town. An observation of the sun's alt. LL, 81° 53′ 45″, index error, 1° 45′ app.

Thursday, May 19.—Finishing tracings, &c., for town. Sun's alt. LL, 81° 23′; index error, 1° 45′ app. 3 miles; thence 5 miles to the creek, bearing to where I struck the creek on my previous journey 222° 30′, 4 miles, and obtained the following bearings:—First Hill Turret, 96° 80′; Mount Strangways, 86°; Nob, 49°; Twins, 33° 45′; Mount Hugh, after Mr. Chambers' youngest son; to our camp for to-night 22°. 2½ miles, about 4 miles from last night's camp, the chain of large water-holes commence, and continue beyond to-night's camp. They are, indeed, most splendid water-holes, not holes, but very long ponds; they are nearly one continuous sheet of water, and the scenery beautiful. I am sorry I did not name it a river in my former journal. On our course we passed small water-holes, but I do not think they are permanent, although they will last a long time. A tributary joins, at which I first saw the creek has permanent water in it. Three miles up it seems to rise from the north hills. I must bring my survey up to this point to-morrow; it is very cloudy to-night, with a strong wind from the south-west, from which the clouds are coming. The country is a little stony, but well grassed, sprinkled with salt-bush; but there is still green-feed on the banks.

Friday, May 20.—At sunrise started stockman for Oratunga with tracings, letters, &c.; with orders to proceed to Finiss Springs, thence to Hergott Springs, thence to St. Beckett's Pool, thence to Mt. Glenns, thence to Mt. Stuart, thence to Oratunga, taking six days to perform the journey to Oratunga. Preparing my other plans for a start to-morrow for the north-west to see what the Davenport range is. Obtained an observation of the sun's LL, 81° 4′ 30″; index error, 1° 45′; lat. 29° 23′ 20″. Index error 2° off compass.

Saturday, May 21.—Started at 8 o'clock on bearing of 310°, for the Davenport Range, 20 miles; Beresford Hill, bearing 253°, about 22 miles. Changed to examine a large lagoon to the south-west of us bearing 238°, distant 2 miles. Changed to 310°, the original course. 4 miles came upon some rain-water, and

camped for the night where there is abundance of feed. Distance to-day 20 miles. The journey has been over low sand-rises, with long valleys between, covered with grass, and very little salt-bush. Examined the lagoon for springs but found none. I suppose it receives Major Warburton's salt-creek: it is covered with a white substance, is dry, and is 7 miles long by 3 broad, running north-east and south-west. On the south-west side it is bounded by steep cliffs and high sand-hills on the top; the feed has been excellent throughout the whole way: the sand-hills are running north-east and south-west, and can be travelled over with the greatest ease. Nothing remarkable has appeared to-day.

Sunday, May 22.—Sent Hergott to examine the south-west side of the lagoon we passed last night, with orders to overtake me by half-past 11 o'clock so that I may get an observation of the sun at noon. Did not get a start till 9·15, the horses having strayed some distance during the night. Started on the same bearing, 310°. Stopped at 11·20 for Hergott to come with the instruments; but owing to the horses having strayed he was not able to reach me until a quarter past 1 o'clock, which caused me to lose the observation. We have come over low sand-hills with plenty of feed. Large clay-pans dry. There are high hills apparently in view a little more to the north, for which I shall alter my course to 328°. To this point 8 miles. 1¼ o'clock started over 2 miles sand-hills: the country then became stony, with less feed, and became bad as we approached the hills. A stony plain to the north-east, but no sign of the lake. We passed two broad watercourses within 2 miles of the hills. Ascended the hill, but could see nothing but the same country all round: proceeded on for about 3 miles on a stony rise where there is a little wood. Saw two native smokes a considerable distance to the south-west. No permanent water the last two days. We still get a little rain-water, but it is getting scarce. There does not seem to have been so much rain here as to the eastward. Distance to-day 20 miles.

Monday, May 23.—Started towards the Davenport Range over the same description of country as yesterday afternoon, but improving rapidly for 7 miles. The sand-hills again commence, with beautiful feed upon them: low with broad valleys; they continued for 6 miles, when the stony plains again commence. The range in view: the highest seems to be at the north-east point, which has the appearance of a detached conical hill. At 3½ miles from the last of the sand-hills saw the Douglas. Changed bearings to where the gums were thickest to 228° 30′, and at 1½ miles struck the creek, but no water in it. There are numerous gum-trees, but not very large; also plenty of myall; many small channels, very sandy, and very loose soil which will not retain water. We followed the Douglas down for 3 miles to see if there was water; but no sign of it, the creek still continuing broad and sandy. I was obliged to return to where I struck it because it was nearly sundown; and I had found a little rain-water, about a mile to the south, which will do for our horses in the morning.

Tuesday, May 24.—Douglas. Hergott's horse in want of shoes. Cannot get a start until late. Found a little more rain-water in a clay-pan. I can find no water near the range. I shall have to fall back upon Strangway's Springs. I am anxious to see what is on the other side of the range or I would run this creek down; by doing so it would take me too far from the range, as its course seemed to be south-east when I left it last night. There are numerous native-tracks about the creek. We have also seen three fires three or four days old, but not anything of the natives. Obtained an observation of the sun's LL, 80° 36′ 45″; index error, 2° 15″; lat. 28° 45′ 4″. Started at 12·30 on a bearing of 313° for the highest point of the range east over stony table-land, the creek running in the same direction for 4 miles; it then turns to the westward, and I lost sight of it among some hills. At 10 miles struck a creek studded with numerous box-trees, the bed of sand and gravel, but no water.

At 11½ descended from the table-land, and arrived at a gum-creek at sundown; the bed the same as the former, and no water. There are numerous native foot-tracks in the creek. It is broad, and divides itself into a number of channels too sandy to retain water. I am sorry I could not reach the range to-night. We had some very bad ground to travel over, and no water. Throughout the journey of to-day the country has been stony and poor; little else but salt-bush, with plenty of ironstone and quartz-pebbles. In the creeks myall is growing: the gums of this creek differ a little from those of the other creeks which I have passed. No water to-night.

Wednesday, May 25.—Examined the creek for water, but found none. Started in the same course as yesterday, 313°, for the north-east highest point, which I suppose to be the Mount Margaret of Major Warburton. Native-tracks seen in the creek. There may be water some distance down the creek, but here it is too sandy to retain it. At 4 miles struck another gum-creek in turning round the south side of the range; of the same description as the others; too sandy to hold water. Proceeded towards the highest point of the range and obtained an observation of the sun within 1½ miles of the Mount —alt. of sun's LL, 80° 45′; index error, 1° 45′ off; bearing of the Mount, 303°. Changed to north 1½ mile to a creek that was coming from the Mount. Left the horses in charge of Müller and ascended the Mount, which was very difficult. It took us an hour to go up, and three quarters to come down. The hill is composed of a greenish slate, at the base lying horizontally, quartz and granite-courses with ironstone, but I can see nothing of Major Warburton's quartz-cliffs; they must be more to the south-west. The range has a very peculiar appearance: from a short distance it seems to be an immense number of conical hills all thrown together; they are very rough and rugged. From the top the view to the north-west was hidden by a higher point of the range. To the north-north-west there is another range about 20 miles distant, apparently higher than this, running south-west by north-east, and at a north line drops down into a large stony plain. To the north is another far-distant range; to the north-east broken hill and stony plain, with a number of clay-pans; to the east a large stony plain with a number of creeks running to the eastward. Coming from this range they become gum-creeks further down, but on and close to the range they have myall-bushes and other shrubs. No water to be obtained in the range. Changed my course to north-east to examine a white clay-pan that has the appearance of being springs. At 3 miles came upon the lagoon, and was very much disappointed to find it salt. This being the second day that the horses have been without water, I must give up the search for springs, and return to 1 mile to the south of the Douglas, where we found a little rain-water. It being nearly sundown I made for the last large gum-creek, striking it lower down, also cutting the other creeks between in the hopes of finding water in some of them, but there is none. Made the large gum-creek at 10 o'clock. Camped for the night. Horses very much done up in consequence of the ground that we have been travelling over being so rotten and stony. The country is not good near the range; but at 3 miles to the east it becomes less stony and better grassed. In the creeks there is plenty of grass, but no water.

Thursday, May 26.—Started at daylight for beyond the Douglas; at 3 o'clock arrived at water; horses very much fatigued. I should require to give them two days' rest to recruit, if the water will hold so long, and then I must return to the Strangways Spring, that being the only permanent water known. There are some heavy clouds coming up from the south-west, which I hope will bring rain. Sundown, we have had a slight shower of rain, but it will not assist me much; it is very vexing to see it all blowing away. I should like to have seen those very distinct ranges to the north. From the

Mount there was no appearance of any lake to the north-east nor east; it must be a long way off.

Friday, May 27.—Douglas. The horses look very much in want of rest this morning. Rain all gone; very sorry for it; can't help it. Obtained an observation of the sun's LL 79° 36′; index error, 1° 15′ off; latitude, 28° 46′ 11″ Horses not looking at all refreshed, but a little rest will recover them.

Saturday, May 28.—Horses look better this morning, but still think it advisable to give them another day's rest. I have sent Müller down the creek to the eastward to see if there is any water in it. I should have gone again to-day to the Davenport range, to see if I can find the quartz-reefs, by striking it more to the south-west; but it would be too much for the horses, which are my mainstay, and this water will not last longer than to-day—it is going very fast. I do wish it would rain, for I hate going back. Sundown. Müller has returned; has been about 12 miles down the creek, but can find no water. It still continues sandy. He shot three new parrots. Sun's LL, 79° 10; index error, 1° 30′ off; latitude, 28° 17′ 17″

Sunday, May 29.—Not being satisfied with my hurried examination of the range, and as the hills have the appearance of producing water, I shall make another attempt to find it; if we do not, I shall have to fall back upon the springs. Started on a course of west-north-west. Crossed the Douglas three times; it turned to the south-west. I continued my course over low hills and valleys, with plenty of feed, with quartz, ironstone, and granite—the quartz predominating, also a few reefs of slate; no appearance of a gold country. At 15 miles changed a little more to the north towards a rise; the country becomes very broken and rough; sand and ironstone, lime and slate, with but few quartz, but still plenty of grass. At 20 miles crossed the upper part of the gum-creek that I camped on on the 25th instant; the banks are slate; cliff nearly perpendicular. Followed up the creek for two miles, but no water; the bed is sandy, and in some places very stony. Not finding water, I continued my course for the rising ground. At 6 miles I find that I am getting upon high table-land, and, the sun being nearly down, I returned to the creek, where there is some green-feed for the horses, as they will be without water to-night. From the high ground I can recognise the hills on my former journey. The gum-creeks that I am now passing are those that I crossed after leaving the stony desert-land, and the tableland I suppose to be the good country with grass and salt-bush. It was after sundown before I reached the creek and camped.

Monday, May 30.—Started at sunrise, determined to follow down the creek (which I have named Davenport Creek), for I think there must be water somewhere before it enters the plain. The flow is to the east. At 5 miles, came upon a beautiful spring in the bed of the creek, for which I am truly thankful. I have named this the Spring of Hope. It is a little brackish, not from salt but soda, and is very good, running a good stream of water. I have lived upon far worse water than this. To me it is of the utmost importance, and keeps my retreat open. I can go from here to Adelaide in any time of the year and any season. Camped for the rest of the day. Sun's LL, 78° 59′; index error, 1° 45′ off; latitude, 28° 33′ 34″.

Tuesday, May 31.—Some of the horses require shoes. I must examine the range a little more before I leave. Alt. sun's LL, 78′ 41″; index error, 1° 45′ off; latitude, 28° 33′ 34″. Shoeing horses, and repairing other things.

Wednesday, June 1.—Not being satisfied with my hurried view of the salt clay-pan that I visited on the 25th ult., I have sent Müller to-day to examine it for springs before I proceed to the north-west. On a further examination of the water I find a very large portion of magnesia in it, and also salt, but very little. Alt. of sun's LL, 78° 24′; index error, 1° 45′ off. Müller has returned,

and, as I expected, found a small spring of very good water on the banks of the salt-creek. I expect there will be others, and shall move down there to-morrow and examine it. I think we have fallen upon the line of springs again, which I hope will continue towards the north. No rain seems to have fallen here for a long time.

Thursday, June 2.—Started at 9 o'clock for the springs, and arrived there in the afternoon. Travelled over a stony but very good feeding-country, plenty of grass and salt-bush; it becomes better as we approach the springs. There is a creek with large water-holes, and around the small hills are numerous springs. On the banks of the creek and round the springs an immense quantity of rushes, bulrushes, and other water-plants are growing; the quantity of land they cover is very great—some square miles. Some of the springs are choked up; others are running, though not so active as those further to the south; round about them there is a small crust of saltpetre, magnesia, and salt. The water of the springs is very good, but that of the creek is a little brackish, but will do very well for cattle. Some of the holes in the creek are rather salt. There is enough of good water for the largest station in the colony round the small hill where I am now camped. There are 12 springs, the water first-rate. All the low hills and plains round about have plenty of grass upon them, and seem to be continued as far as we can see. The hills are composed of slate, mica, quartz, resembling those of the gold country; ironstone, mica in them all. I obtained an observation of the sun to fix the mount, which was—sun's LL, 78° 26′ 30″; index error, 1° 7′ off; lat. 28° 24′ 17″; mount bearing 267° 45′. One of the horses seems to be very unwell to-day; he has endeavoured to lie down two or three times during the journey, but I hope he will be better by the morning. I have named these Hawker Springs, after George C. Hawker, Esq., M.P.

Friday, June 3.—I find that the horse is too unwell to proceed; I shall give him another day, for fear I should lose him altogether. I have sent Müller to see if there are any springs round an isolated hill to the east, about 6 miles. He states that the creek flows past that hill, and on towards other hills of the same kind; the springs continue to within ½ mile of the hill. There he found two large springs running over, covered with long reeds. I do not doubt but that they still continue on towards the lake, wherever that may be, which I intend to examine on my return. All good feeding-country, and improving as he went east.

Saturday, June 4.—This morning the horse does not look much better, but still I must push on. Started at 8 o'clock, course 323° 45″, towards the highest point of the next range. At 1 mile struck a gum-creek coming from the Davenport range, and running to the north of east; the bed sandy and grassy. At 4 miles another gum-creek of the same description, the gum-trees stunted. At 8½ miles three creeks, joining at about ¼ mile to the east; the centre one is gum, and the other two myall. At 12 miles changed my course to 29°, to examine three dark-coloured hills, where I think there will be springs. At a mile and a quarter came upon a small batch of springs round the north side of the hills, in a broad grassy valley, with plenty of good water. Changed my course again towards the highest point of the range, to 310°. At 1 mile myall and gum-creek; at 3 miles another gum-creek; at 7 miles a very large and broad gum-creek spread out into numerous channels. I have not the least doubt but there is water above and below, judging from the numerous tracks of natives and emus treading in every direction. As this is the largest creek that I have passed, and likely to become as good as Chambers Creek, which it very much resembled, I have used the liberty of calling it the Blyth Creek, after the Honourable Arthur Blyth. I am finding so many springs in my course that I consider it would be a loss of time to examine the ranges to the east. I have named the range to the eastward the

Hanson Range, after the Honourable R. D. Hanson. I expect to cut it in a day or two, as its apparent course inclines towards me. At 9½ miles I ascended the highest point of the range, built a cone of stones thereon, and named it Mount Younghusband, after the Honourable W. Younghusband, M.L.C. From it I had a good view of the surrounding country. To the south are another batch of springs; bearings from this 184°, about 5 miles distant, apparently very large, and another one a little more to the west, bearing 199°. To the north-west there seems to be a greater number; also another isolated range about the same as this, I should think about 700 feet high, which I have named Mount Kingston, after the Honourable G. S. Kingston, Speaker of the House of Assembly. To the north the broken ranges continue, and in the distance there is a long flat-topped range, broken in some places from south-east to north-west. It seems closing upon my course in the last bearing; I cannot judge of the distance, the mirage being so great. To the north-east, east, and south-east is the table range. Between there seems to be a plain, with numerous creeks, well grassed, with the appearance of many springs all over it. Descended from the mount, and proceeded round the east side of it to the same springs that I saw from the top, bearing 336°. Mount Margaret bears from the top 161°; Mount Kingston, 329°. As we were rounding the mount to the east we found eight springs before we halted, in a distance of 3 miles; some were running, and others were choked up, but soft and boggy. At dark arrived at another batch of springs; not those I intended going to. They are on the banks of a small creek, close to and coming from the range. They are not so active as the others, and taste a little brackish; they are coated with soda, saltpetre, and salt. The horse seems to be very ill; has attempted to lie down two or three times. I cannot imagine what can be wrong with him.

Sunday, June 5.—I must remain where I am to-day. The horse is so bad that he cannot proceed; he neither eats nor drinks. I have sent Müller to the west side of the mount, to see the extent of the springs; they are on the banks of a creek, which has brackish water in it, large and deep, and a great quantity of rushes. The water comes from the limestone banks, which are covered with soda. He rode round the mount. It is all the same, and the feed is splendid to the top of the mount. Some parts of our course yesterday were rather stony, and scanty of feed; but as we approached the mount it became better, and close to the mount it is as good as could be wished for. Although the grass is dry, it is in abundance, and to the east and north-east the plain seems to be of the same character. It is a wonderful country, scarcely to be believed. I have had one of the most brackish of the springs opened to-day, and the water to-night tastes excellent; it could not be better. Native-tracks about; but I am surprised we see no one; their old fires we are passing constantly. Sun's LL, 78° 27′ 15″; error, 1° 7′ off; lat. 28° 1′ 32″.

Monday June 6.—Mount Younghusband. The horses being some distance off, and my horse requiring a shoe, I am unable to make a start until 10 o'clock, on a bearing of 307° 45″, passing Mount Kingston on the south-west side. At three-quarters of a mile came upon the springs that I intended to have camped on on Sunday night; they are flowing in a strong stream, enough to supply any number of cattle. I named these the Barrow Springs, after J. U. Barrow, Esq., M.P. At 1¼ mile other small springs; at 2½ miles found a myall-creek; at 3 miles crossed 4 myall-creeks; at 4½ miles struck a large broad valley, in which are the largest springs I have yet seen. The water that is coming from them is immense, flowing in numerous streams, and the country round beautiful; their extent is very great. These I have called the Freeling Springs, after the Honourable Major Freeling, M.L.C. After leaving the springs I ascended a rough stony hill, to have a view of them; but I could not see them all, their extent is so great. They extend beyond the Kingston range, and how much further I do not know. From this point changed my course to

322°; distance from last camp to this 4½ miles. I can just see the top of a distant range, for which I will go on that bearing. At 1½ mile crossed a broad gum salt-creek coming from the west, with a quantity of salt water in it, this I have named Peake Creek, after C. J. Peake, Esq., M.P. After crossing this we travelled over low rises with quartz, ironstone, and slate; the quartz predominating. The country has the appearance as if it were covered with snow from the quantity of quartz. At 11 miles passed a brackish water-creek and salt-lagoon. Searched for springs but could find none, although there are a number of reeds and rushes, but no water on the surface. I thence proceeded three-quarters of a mile and struck a gum-creek with a number of channels and very long water-holes, but the water is brackish; it would do for cattle. This I have named the Neale, after J. B. Neale, Esq., M.P. I think by following it down there will be a large quantity of water, and good, and will become a very important creek. No person could wish for a better country for feed than that we have passed over to-day. It resembles the country about Chambers Creek.

Tuesday, June 7.—At 8 o'clock started on a bearing of 180° for the northern-most of the isolated hills, to see if there are springs around them. At 4 miles ascended it, but could see no springs. This I have named Mount Harvey, after John Harvey, Esq., M.P. From Mount Kingston bears 47° 45'. Thence I started for the other mount, which I have named Mount Dutton, after the Honourable F. T. Dutton; 4½ miles to the top. All the country to the north-west is the same. There is no appearance of any more springs. The Hanson Range is closing upon my course, and I think to-morrow's journey we will cross it. On the north side are a few springs; some of them are a little brackish, and some very good. We have cleared out one and found the water very good. Here I camped for the night. I am afraid the springs are about to leave us. From south-west to north-west it seems to be an immense plain, stony on the surface, with salt-bush and grass. Mount Dutton is well grassed to the top; it is composed of the same rock as the others.

Wednesday, June 8.—At 9.15 started on a course of 310°. At three-quarters of a mile passed another batch of springs, some of them brackish and some very good indeed. Leaving them we passed over a good feeding country, crossing several gum and myall creeks, one with polygonum, all coming from Hanson Range and flowing into the Neale. At 9 miles crossed the top of Hanson Range. From it I could see about 15 miles to the west of north, the highest point of the range, which I have named Mount O'Halloran, after the honourable and gallant Major O'Halloran. On the west side of Hanson Range there appears to be a large creek coming from the north-west and breaking through the range a little to the north of west from this point, which I think is still the Neale. We then proceeded on a course of 324° towards Mount O'Halloran. At 4½ miles struck a large gum-creek coming from the range and running for about 4 miles north-west on our course. Examined it for water, but found none. It divides itself into numerous channels, and when full must retain a large quantity of water for a long time. The gum-trees are large and numerous, and numbers of pigeons frequent its banks. At a mile further came upon some rain-water in a stony flat, where we camped for the night. The country on the north-west side of the range begins to improve very much, although stony. We are now camped between low sand-rises covered with grass. There must have been some rain here about a fortnight or three weeks ago.

Thursday, June 9.—This country must be examined to-day for springs, and to ascertain if there is permanent water in the creek. The horse is getting better, and will be the better for a day's rest. I have therefore sent Müller down the creek to search that, whilst I must remain and get an observation of the sun. My party is far too small to examine the country well. I cannot go

myself and leave the camp with the provisions to one man; the natives might attack him and destroy the lot. There seem to be a great many tracks about. 3 o'clock.—Müller has returned; he has run the creek down until it joined another very large gum one coming from the north-west. The one that I saw from the top of the range is also spread out into a number of channels. The gum-trees large. From some of these trees the natives had cut a large sheet of bark, evidently for a canoe. He also saw two large water-holes, 100 yards wide and ¼ mile long, with very deep and steep banks. It seems to be the same creek as the Neale. Can it be Cooper Creek? The country very much resembles it. My course will strike it more to the north-west to-morrow.

Friday, June 10.—I have been very unwell during the night with cramp in the stomach, but hope I shall get better as I go on. Started at 8 o'clock on a bearing of 32° 4'. At 4 miles went to the top of Mount O'Halloran. The creek is about 3 miles distant west; it breaks through the Hanson range at 190. From this to where the creek comes from, 280°, other two branches join in this bearing at about 2½ miles. Distance from the camp to the mount 4 miles. From the mount changed my course to 317° to get away from the stones, which are very rough close to the hill. At 6 miles changed my course to 270° to examine an isolated hill for springs, but found none. I am afraid they have turned to the west. The creek winds round this hill and spreads out into numerous channels, covering a space of 2 miles. There is no water here nor for 3 miles further up the creek, but we have found some rain-water on the banks. Being too unwell to ride I have camped here for to-night, and sent Müller to examine the creek for water, but he was unsuccessful. The country travelled over to-day is very good, with a few stones on the surface; but the banks of the creek for 2 miles are beautifully grassed. Before changing to the hill we crossed a low mound of gypsum, with stunted box, running at right angles to our course.

Saturday, June 11.—I feel a little better this morning. Started at 9.20 on a bearing of 317°. Crossed the creek, which is about a mile wide. For 5 miles it ran parallel to my course, then turned more to the west. There is a most beautiful plain along the banks, about 3 miles wide and completely covered with grass. At 9½ miles, in a small rise, changed my course to 318° to a distant hill. For 9½ miles travelled over another large and beautiful plain of the same description; thence over some low, stony hills, well grassed. Entered upon a myall-flat; the soil beautiful, of a red colour, covered with grass 4 miles; it then becomes sandy, and at 31 miles sand-hills commence, very low, with plenty of grass. Camped for the night. The sand-hills seemed to extend a long way. To the north of east are some high hills, all trending towards the north-west. The country travelled over to-day surpasses all that I have yet gone through for the abundance of feed. We have passed a number of native-tracks—only one or two fresh ones. We have found no water to-day, except some little rain-water, which is nearly all mud. I have no doubt but there is plenty towards the east.

Sunday, June 12.—I feel still very unwell. We are now come to our last set of shoes for the horses, and, having experienced the misery of being without them on my previous journey, it is with reluctance that I am forced to turn back. My party is also too small to make a proper examination of such splendid country. Started back, keeping true to the east, to examine a high hill in search of water. If I can find water, I shall endeavour to reach the north boundary. At 20 minutes to 12 o'clock arrived at the hill, and obtained an observation of sun's LL, 78° 48' 15"; index error, 1° 30"; latitude, 27° 12' 30". Can see no appearance of water, although the country appears good all round. 10° to the east of north is a large, dark-coloured hill, which I saw from last night's camp, from 15 to 20 miles distant. I should like to go to it, but can find no water; all round the hills it has a promising appearance. I have

named it Mount Browne, after J. H. Browne, Esq., of Port Gawler, my companion in Captain Sturt's expedition. I dare not rest the horses another night without water, the grass is so very dry. Had there been green grass, I would not have hesitated a moment. Turned towards the Neale by a different course to try and find water. Was unsuccessful, until, within an hour of sundown, we struck some muddy water. As I expected, the horses were very thirsty, and devoured the lot. Reached the creek after dark.

Monday, June 13.—Found some rain-water on the banks of the creek, and, two of the horses requiring shoes, I stopped for the day. At noon sent Müller up the creek to see if he could find any water-holes, but he saw none. At 6 miles there is another creek joins this, coming from the south-west, this one coming more from the north-west. I am afraid I shall not have shoes enough to carry me into the settled districts. I shall follow the creek down, and see where it runs into; it does not seem to have been running for a number of years. The water has been 10 feet high. The breadth of the plain where the channels flow is a mile and a-half, and the quantity of water that flows down must be immense. It drains a very large extent of country. After examining the country during the next two or three days, I shall endeavour to follow it down and learn where it empties itself.

Tuesday, June 14.—Started 9 o'clock, bearing 135°. Running the creek down. At 8 miles crossed another branch of the creek coming from the south of west, of the same description as this one. A broad plain with many watercourses and heavily timbered with box-trees. We found no water. At 12 miles changed my bearing to south. At 3½ miles camped at the two water-holes that Müller found when I sent him to examine the creek on the 9th instant. I could not with certainty say they are permanent. There are neither reeds nor rushes round them; they are very large and very deep, and when filled by rain must hold a large quantity of water for a very long time. There are ducks upon them. They might be supplied by springs from below. The water does not taste like rain-water, which leads me to think that it may be permanent.

Wednesday, June 15.—Started 9.15 A.M. on a course of 195°, following the creek down. As we approached Hanson Range, where it broke through, we came upon two nice water-holes with duck upon them. They are long, wide, and deep, with clay banks, and about 3 feet of water in the middle. There are no reeds nor rushes round them, and it is doubtful whether they are permanent or not. At 7½ miles the creek winds a little more to the west; changed course to it 200°. At 1¾ mile we struck (in the gap) two very long and large water-holes—a quarter of a mile long, between 40 and 50 yards wide, and very deep. These I may safely say are permanent. After getting through the range, the creek spreads out over a large plain in numerous courses bearing towards the south-east. At 4½ miles changed my course to 150°. 6 miles going more to the east changed again to 110°, and at 8 miles camped for the night without water. We have found no water since leaving the last water-holes. Although I do not doubt of there being more, it would have taken me too long a time to examine it more than I have done, my party being so small. We have passed several winter wurlies of the natives, built with mud in the shape of a large beehive, with a small hole at the entrance. Numerous tracks all about the creek, but we see no natives—the creek still continuing spread out over the plain. We are now approaching the Spring Country again.

Thursday, June 16.—Started at a quarter past 11—still following the creek. Course, 113°. From the camp Mount Dalton bears 77°. The creek still continues to spread widely over the plain. At 5 miles I observed some white patches of ground on the south-west side of Mount Dalton, resembling a batch of springs. I changed the course to 55°, and steered for them, crossing the

Neale at 2¾ miles. On the south-west side of the Neales the country is rather stony, and for about a mile from it the feed is not very good, in consequence of its being subject to inundation; but beyond that the feed is beautiful; large open plains, with some stones on the surface. At 3½ miles made the white place, and found it to be springs covering a large extent of country, but not so active as those formerly described. They would require to be opened, and then there would be abundance of water for all purposes. The water from those that have been opened and are running is beautiful. Leaving the springs, steered in a bearing of 117°. At 2 miles crossed the Neale at a place where it becomes narrower, and the channels much deeper, in which there are long sheets of salt and brackish water. I shall now leave the creek, as I see it is the same that I crossed on the 6th instant. In the time of a flood an immense body of water must come down it. At the widest part, where it spreads itself out in the plain, the drift stuff is from 14 to 15 feet up in the trees. Camped at 4 P.M.

Friday, June 17.—Discovered another large quantity of water, supplied by springs. This certainly is a wonderful place for them. There is an immense quantity of water running now.

Saturday, June 18.—Started early in the morning to examine the country. Found large quantities of quartz, samples of which I brought with me. Still well watered, but without any timber.

Sunday, June 19.—Still water in abundance, with large quantities of quartz. The course the quartz seems to take is from south-west to north-east. The place we examined to-day is a large basin, surrounded by the hills from Mount Younghusband and Mount Kingston, with the peaks running through the centre, and the quartz-spurs all trending towards the centre. To-morrow I shall have a look along the north-east side of Mount Kingston, for I see the quartz apparently goes through the range, and breaks out again on the north-east side, which is very white.

Monday, June 20.—Started at 8 A.M. to examine the quartz on the east side of Mount Kingston; course 348°; crossed the Peake, and, at 3 miles, struck a quartz-reef. The Freeling Springs still continued, but seem inclined to run more to the eastward. Changed my course to 34°, to a peak on a low range, which has a white appearance; at 8 miles reached the peak. The quartz ceases altogether, and the country stony from here. I can see the line of the Neale running eastward again, spread out over the plain. It was my intention to follow it until it reached the lake, but I find the ground too stony to allow me to do so. Having 300 miles to travel yet before reaching a station, and being reduced to my last set of shoes, and some of them pretty well worn, I am obliged to retreat. Changed my course to 135°; at 7 miles crossed the bed of the Peake, 3 miles broad, with a number of brackish water-holes, some very salt. At this point the trees scarce. I can see nothing of the lake. The country between the last point and this is good, salt-bush and grass, with stones on the surface. At 11 miles changed to 163°, and at 3 miles changed to 175°; 4½ miles camped on a gum-creek without water. The 163° course was over a very rotten brown plain, surrounded by low cliffs of gypsum, quite destitute of vegetation. It has evidently been the bed of a small lake at some time; There is no salt about it. On the last course the country again improved, and where we are now camped has become good.

Tuesday, June 21.—At 7·40 started in the same course as last night, 175°. At 1¾ mile changed to 173°; at 1 mile myall and gum-creek; at 8 miles large gum-creek; at 9 miles changed to the hill, to where I had sent Müller, and where he found two springs. Instead of only two, they are numerous all around the hill. Some are without water on the surface, and others have plenty. It is a bed of springs. A little more east they are stronger, surrounded with green reeds and rushes.

Wednesday, June 22.—Started at twenty minutes to 9 o'clock; course 67°. At 3½ miles large hill of springs, covered with reeds and rushes; water running and good, with numerous other small ones all round. They are a continuation of those we camped at last night, with an abundant supply of excellent water. At 4 miles crossed the salt-creek, coming from Hawker's Springs; 8 miles crossed three salt and soda lagoons, surrounded by lime and gypsum mounds, in which are numerous springs up to the foot of the hills, and all round them. The hills I have named Parry Hills, after Samuel Parry, Esq. Distance 10½ miles. The springs are not quite so active; the lagoons are boggy. On my course we passed a large spring, with excellent water and plenty, and from the wet courses that I see coming from the mound I judge there is a plentiful supply. The country around is good, though stony. It was my intention to have gone to the east from this, but my horse's shoes will not admit of it. To the north, about 10 miles, there is another hill, which has the appearance of springs, and the salt-creek is running in that direction. To the south-east I observed other three conical hills, for which I will now steer, the bearing 156°. At 7 miles crossed a gum-creek, in which are large water-holes, where water had been lately, but now only mud. There might be water either up or down the creek, for there are numerous native-tracks leading both ways. At 10 miles crossed a large gum (stunted) creek, with springs. There is an abundance of water, but rather brackish; beds of rushes in the creek. At 19½ miles camped on a broad creek, spread over the plain, but no water. The country good.

Thursday, June 23.—The horses have strayed some distance. Started at 8·28 on the same course, 156°, for the conical hill. At 3 miles ascended it, and found it to be flat-topped. I can see nothing of any lake to the east; the view is interrupted by a flat-topped range; to the south-east the same. The country is stony, with plenty of grass and salt-bush. From this I changed my course to 182°, and at 3½ miles observed a peculiar-looking spot to the south-west, which has the appearance of springs. Changed my course for it to 245° and at 6 miles came upon a hill of springs, surrounded by a number of smaller ones, with an ample supply of first-rate water. The hill is covered with reeds and rushes: it is situated at the west side of a large plain, which lies low, and is bounded by stony table-land on the east, which has an abrupt descent of about 30 feet into the plain. On the west side are a number of broken hills, and a small range composed of gypsum and lime, having the surface covered with fragments of quartz, ironstone, and a number of other pebbles. On the hill where the springs are we have found lava. There are numerous small creeks coming from the hill, and running in every direction: they seem to be all in confusion. The plain is about 5 miles wide. These I have named the Louden Springs. Mount Margaret bears 290°, and Mount Stevenson 45° 80′.

Friday, June 24.—I must remain here to-day, and put the last of the shoes upon some of the horses, which are getting rather lame; I have been making them go without as long as I can.

Saturday, June 25.—Started in a bearing of 140°, at ten minutes to 8. At a quarter to 9, 3 miles, crossed a gum-creek; and at 12 o'clock, 11 miles, crossed the Douglas, but no water. The channel still broad and sandy; the country very good. At 10 miles, 4 o'clock, changed course (22 miles); changed to 108°, to a lagoon; 2 miles, changed to 140°; 5 miles, camped without water. The country travelled over to-day has been very good, although stony in some places. The lagoon is large, surrounded by table-land, in some places precipitous; the surface stony, with grass and salt-bush; underneath lime and gypsum. It being after sundown, I could see no springs. Camped without water. After unsaddling we observed a fire at some distance from us

to the south-west. I shall steer for it in the morning; there must be water there.

Sunday, June 26.—Started 8·25 A.M., on a bearing of 217°, to about where the fire appeared last night. Crossed the lagoon, which was rather boggy in some places. It is more than 2 miles broad, with a white crust on the top composed of soda and salt, but mostly salt. It must be supplied by springs. At 3 miles crossed a salt-creek with salt water; it empties itself into the lagoon, and is the same that passes by the Strangways Springs. I can see nothing of any springs at this part of the creek. Steered upon the same course to intersect my outward tracks. Saw some natives walking along a valley; they did not observe us. I hailed them, and an old man came up to us. He was rather frightened, and trembled a good deal. He seemed to wonder and be pleased at my smoking a pipe of tobacco. I gave one to him with a piece of tobacco, but he did not know how to manage the cutting, filling, and lighting operations. I did that also for him. In his final attempt he put the wrong end into his mouth, which he found to be rather warm, and quickly took it out. I then showed him the right end. He managed a whiff or two, but he did not fancy it. He seemed very much pleased with the pipe, which he kept. I then made him understand that I wanted water. He pointed the same course that I was steering. In a short time another one made his appearance in the distance. By a little persuasion from the old fellow he was induced to come up, and in a short time became very talkative, and very anxious to show us the water. In a few minutes a third one made his appearance, and came. He was the youngest; a stout, able-bodied fellow, about twenty-four years old. The others were much older, but were very powerful men; and all three in excellent condition. The women did not come up, but remained in the flat. I expected that they were about to take us to some springs, and was disappointed when they showed us some rain-water in a deep hole. They were quite surprised to see our horses drink it all. They would go no further with us, nor show us any more. In a short time after they left us, we struck our outward tracks, and steered for the Elizabeth Springs, where we arrived after dark.

Monday, June 27.—Gave the horses a half-day's rest, and made Mount Hamilton Springs in the afternoon.

Tuesday, June 28.—Started for Chambers Creek to my first encampment. Arrived there in the afternoon. Distance 18 miles.

Wednesday, June 29.—Resting the horses and preparing for a trip down on the west side of Mount "North-West," to see if I can find a road and water that way.

Friday, July 1.—Started at 8 o'clock on a bearing of 120°. At 24 miles camped on a water-hole in Gregory Creek, where it comes out of the hills. There are three remarkable peaks north of the water; one in particular having a white face to the east, with a cover of black stones on the summit, distant about one mile. The first 5 miles was over a well-grassed country with stones on the surface, slightly undulating, with a number of good valleys running into the creek. The sand-hills then commenced with splendid feed upon them, varying in height from 10 to 30 feet high; broad, stony valleys between. They continue about 2 miles. Then they become very low, and the valleys very broad, and empty themselves into the Gregory Creek. At 22 miles crossed the main channel of the creek. It is divided into a number of courses, with some very deep holes in them. When they are filled, they must retain water for a length of time. There are numerous native encampments all about the creek. The gums are dwarf.

Saturday, July 2.—Started 10·8, course 120°. 3 miles, opposite a long, permanent water-hole, with rushes growing round it. 7 miles, crossed the

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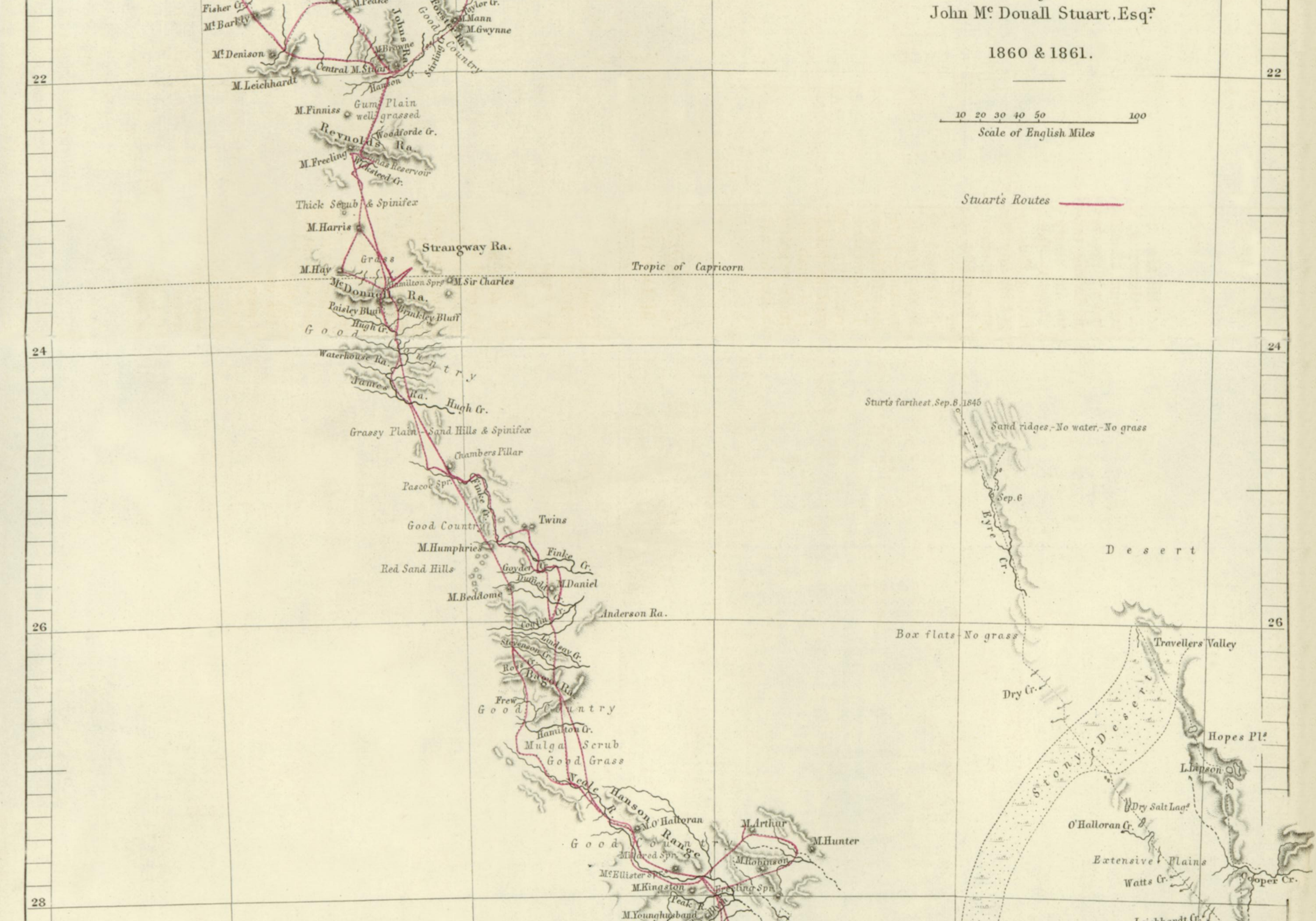
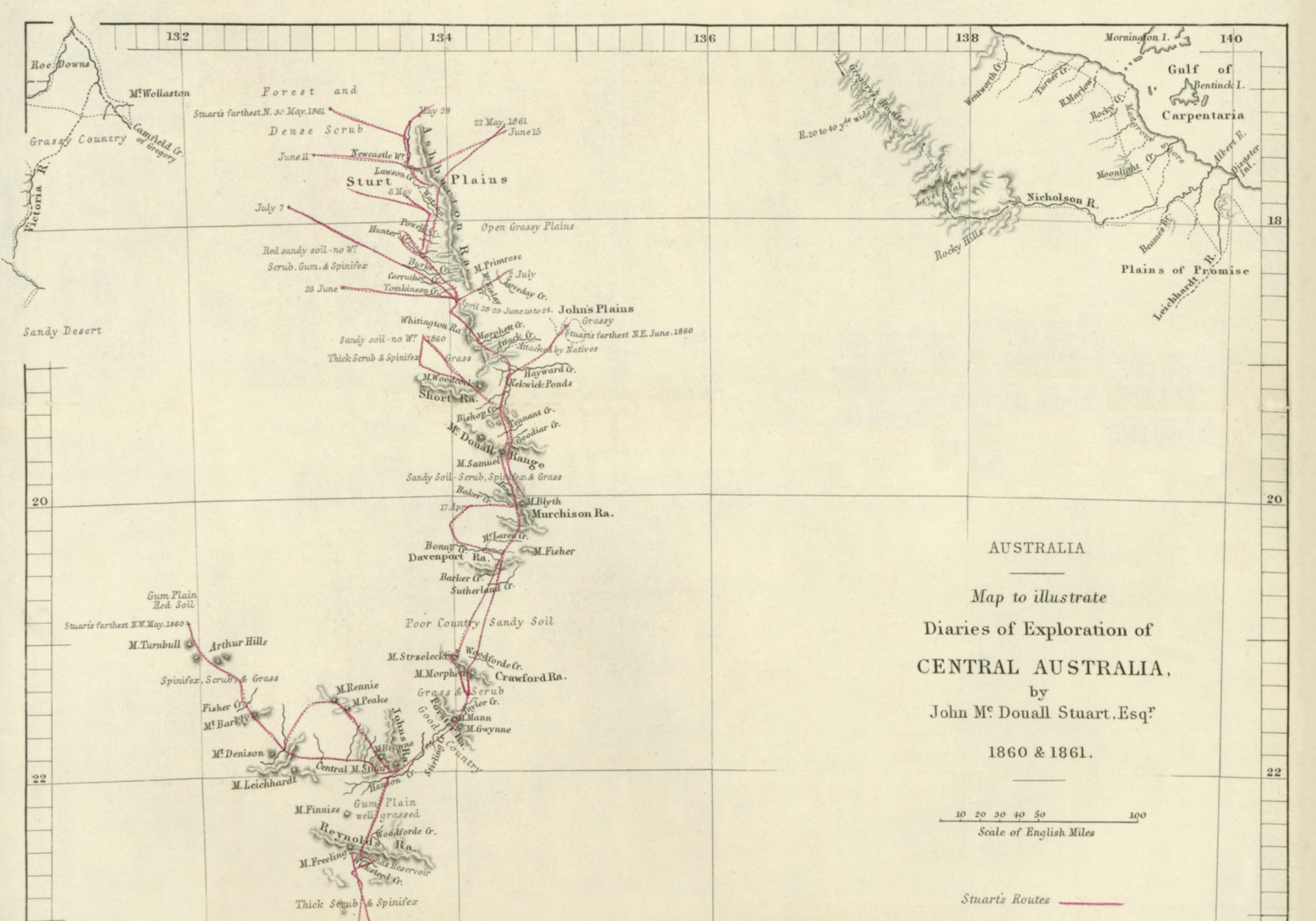
J.Arrowsmith.


John Mc Douall Stuart, Esqr
1860 & 1861.
10 20 30 40 50 100
Scale of English Miles
Stuart's Routes
22
24
26
28
Fisher Cr.
Mt Barkly
Mt Denison
M. Leichhardt
Central M. Stuart
Johns Ra.
M. Browne
M. Mann
M. Gwynne
Stirling Cr.
Good Country
Hanson
M. Finniss
Gum Plain well grassed
Reynolds Ra.
Woodforde Cr.
M. Freeling
Thick Scrub & Spinifex
M. Harris
Strangway Ra.
M. Hay
Grass
Tropic of Capricorn
M. Sir Charles
McDonnell Ra.
Paisley Bluff
Brinkley Bluff
Hugh Cr.
Good Country
Waterhouse Ra.
James Ra.
Hugh Cr.
Grassy Plain - Sand Hills & Spinifex
Chambers Pillar
Pascoe Spr.
Finke Cr.
Good Country
Twins
M. Humphries
Red Sand Hills
Goyder
Finke Cr.
M. Daniel
M. Beddome
Anderson Ra.
Lindsay Cr.
Bagot Ra.
Frew
Good Country
Hamilton Cr.
Mulga Scrub
Good Grass
Neale R.
Hanson Range
M. O'Halloran
Good Country
M. Arthur
M. Hunter
M. Robinson
McEllister Spr.
M. Kingston
Freeling Spr.
Peak R.
M. Younghusband
Sturt's farthest. Sep. 8. 1845
Sand ridges - No water - No grass
Sep. 6
Eyre Cr.
Desert
Box flats - No grass
Travellers Valley
Dry Cr.
Stony Desert
Hopes Pl.
L. Lipson
Dry Salt Lag.
O'Halloran Cr.
Extensive Plains
Watts Cr.
Cooper Cr.


132
134
136
138
140
18
20
22
Roe Downs
Mt Wollaston
Victoria R.
Grassy Country
Camfield Gr. of Gregory
Sandy Desert
Forest and
Dense Scrub
Stuart's farthest N. 30 May. 1861
May 28
22 May, 1861
June 15
June 11
Newcastle Wt
Lawson Cr.
Sturt Plains
6 May
July 7
Powell Cr.
Hunter Cr.
Open Grassy Plains
Red sandy soil - no Wt.
Scrub, Gum, & Spinifex
Burke Cr.
Carruthers Cr.
Tomkinson Cr.
26 June
M. Primrose
2 July
Eveday Cr.
April 26-29 June 10 to 24.
John's Plains
Grassy
Whitington Ra.
Morphett Cr.
Attack Cr.
Stuart's farthest N.E. June. 1860
Attacked by Natives
Sandy soil - no Wt. 1860
Thick Scrub & Spinifex
Grass
Hayward Cr.
Kekwick Ponds
M. Woodcock
Short Ra.
Bishop Cr.
Tennant Cr.
Goodiar Cr.
Mc Douall Range
M. Samuel
Sandy Soil - Scrub, Spinifex & Grass
Baker Cr.
17 Apr
M. Blyth
Murchison Ra.
McLaren Cr.
Bonny Cr.
Davenport Ra.
M. Fisher
Barker Cr.
Sutherland Cr.
Gum Plain
Red Soil
Stuart's farthest N.W. May. 1860
Poor Country Sandy Soil
M. Turnbull
Arthur Hills
M. Strzelecki
Woodforde Cr.
M. Morphett
Crawford Ra.
Spinifex, Scrub & Grass
M. Rennie
M. Peake
Grass & Scrub
Fisher Cr.
Mt Barkly
Taylor Cr.
M. Mann
M. Gwynne
Johns Ra.
Mt Denison
M. Browne
Central M. Stuart
Good Country
Stirling Ra.
M. Leichhardt
Marston Cr.
Gum Plain well grassed
M. Finniss
Woodforde Cr.
Reynolds Ra.
M. Freeling
Waterhouse's Reservoir
Whitestead Cr.
Thick Scrub & Spinifex
Gregory's Boodie
R. 20 to 40 yds wide
Wentworth Cr.
Turner Cr.
R. Marlow
Rocky Cr.
Masterman Cr.
Mornington I.
Gulf of
Bentinck I.
Carpentaria
Moonlight Cr.
Albert R.
Disaster Int.
Nicholson R.
Level Val.
Rocky Hills
Beames Br.
Plains of Promise
Leichhardt R.
AUSTRALIA
Map to illustrate
Diaries of Exploration of
CENTRAL AUSTRALIA,
by
John Mc Douall Stuart, Esqr
1860 & 1861.
10 20 30 40 50 100
Scale of English Miles
Stuart's Routes

upper part of the Gregory. 8½ miles, top of dividing range. 13 miles, crossed a creek with rain-water. 14 miles, crossed another deep channel. Camped at 23 miles, within 12 miles of Termination Hill. The country for 10 miles before we halted was very good. On leaving Chambers Creek I crossed the range which divides the waters that empty North and South Lake Torrens, the range running nearly east and west.

Sunday, July 3.—Rounded Termination Hill, and arrived at Mr. Glenn's station. Having thus reached the settled districts, I have not thought it necessary to keep any further details of the progress of the journey. I have much pleasure in stating that Mr. Hergott, my botanist, and Mr. Louis Müller, my stockman, have afforded me in their several capacities all assistance in their power, and conducted themselves entirely to my satisfaction.

Adelaide.—Before I conclude I am anxious to record my grateful acknowledgments to my friends Messrs. Chambers and Mr. Finke, to whose kindness and assistance I was solely indebted for fitting out the expedition, and enabling me to fulfil my long-cherished desire to explore the interior of the province. I congratulate the colony on possessing such gentlemen of liberal minds and means; and should I, from my friends' kindness and liberality, be again entrusted as leader of the contemplated expedition to the north-west coast, I hope I shall be enabled, by the assistance of Divine Providence, to realise all their expectations, and confer the benefit on my fellow-men of opening up a line for rail and telegraphic communication with England.

VI.—*Journal of Australian Exploration.*—By Mr. John M'Douall Stuart, Gold Medallist, F.R.G.S.

Read, January 14, 1861.

Friday, Nov. 4, 1859.—Started from Chambers Creek for the Emerald Springs. At 10 miles crossed nine fresh horse-tracks going eastward; I suppose them to be those of his Excellency the Governor-in-Chief. I have not as yet seen his outward track. Arrived at the spring before sundown.

Saturday, Nov. 5.—Emerald Springs. Started at half-past seven o'clock on a course of 340°: at 7½ miles changed to 38°. 3 miles to a high sand-hill, from which I could see two salt-lagoons, one to the south and one north; examined them, but could find no springs. Next bearing 18°, to clear the lagoon. 2½ miles sandy, with salt-bush and grass; sand-hills broken and irregular. Changed to our first bearing, 340°. 6 miles, sand-hills not so broken, and crossing our line at right angles; same description of feed. Changed to a high hill, apparently stony, on 350°: at 5 miles reached the top and found it to be so; can see the lake lying to the north of us about 5 miles distant. The sand-hills have ceased, and ironstone taken their place. Changed to 315° to get a good view of the lake. 3½ miles, looked all round for water, but could find none; camped without at sundown; had a good view of the lake. There is a large bay from the north-north-east to the north-north-west; there is nothing visible but the dark-blue line of the horizon. To the north-north-east there is an island very much resembling the shape of Boston Island, Port Lincoln. To the east of it there is a point of land coming from the main between island; and it is the same dark, deep-blue line. To the north-north-west are apparently two small islands. A short distance to the east of the horn of the bay there seems to be much white sand or salt for from 2 or 3 miles from the beach, towards the blue water (on this side of which there is a white line as if it were surf); this again appears at the shores of the island, and also at